

**WHAT IS CLAIMED IS:**

1           1.       A tape for shielding insulated electrical wire to provide a positive attenuation of  
2 and protection from electromagnetic and radio frequency interference, said tape comprising:  
3           an outer insulation layer formed of PTFE; and  
4           an inner conductive layer formed of metallic powder dispersed in PTFE.

1           2.       The tape of Claim 1 wherein said inner conductive layer comprises substantially  
2 equal parts of metallic powder and PTFE.

1           3.       The tape of Claim 1 wherein said metallic powder is selected from the group  
2 consisting of copper, iron, nickel, aluminum, silver, gold and carbon, alone or in combination.

1           4.       The tape of Claim 1 wherein it is constructed so that it can be spirally wound  
2 and cured on the insulated electrical wire.

1           5.       A method of manufacturing the tape of Claim 1 wherein said outer insulation  
2 layer is coated with said inner conductive layer, and said inner conductive layer is cured  
3 thereon.

1           6.       The method of Claim 5 wherein said inner conductive layer is heat-cured on  
2 said outer insulation layer.

1           7.       The tape of Claim 1 wherein an outer conductive layer is disposed on the outer  
2 surface of said insulation layer and is formed of metallic powder dispersed in a PTFE  
3 dispersion or ink solution.

1           8.       The tape of Claim 1 wherein an inner insulation layer formed of PTFE is  
2 disposed on the inner surface of said inner conductive layer, said inner and outer insulation  
3 layers being offset laterally to expose inner and outer lateral end portions of said inner  
4 conductive layer.

1           9.       The tape of Claim 8 wherein an adhesive with slipsheet layer is disposed on the  
2 inner surface of said inner insulation layer.

1           10.      The tape of Claim 1 wherein said inner conductive layer is formed of metallic  
2 powder disposed in a PTFE dispersion or ink solution.

1           11.      Shielded electrical wire, comprising:  
2                   insulated wire;  
3                   a conductive layer surrounding said insulated wire to provide a positive  
4 attenuation of and protection from electromagnetic and radio frequency interference, said  
5 conductive layer comprising metallic powder dispersed in PTFE; and  
6                   an insulation layer formed of PTFE surrounding said conductive layer;  
7 said conductive layer and said insulation layer being formed by a tape having said layers that is  
8 spirally wound around and cured on said insulated wire.

1           12.      The shielded electrical wire of Claim 11 wherein said conductive layer  
2 comprises substantially equal parts of metallic powder and PTFE.

1           13.      The shielded electrical wire of Claim 12 wherein said conductive layer is  
2 formed by dispersing said metallic powder in a PTFE solution, and heating and curing said  
3 metallic powder-PTFE mixture on said insulation layer of said tape to form said conductive  
4 layer thereon.

1           14.      The shielded electrical wire construction of Claim 11 wherein said metallic  
2 powder is selected from the group consisting of copper, iron, nickel, aluminum, silver, gold  
3 and carbon, alone or in combination.

1           15.      The shielded electrical wire of Claim 11 wherein said tape comprises a second  
2 conductive layer surrounding said insulation layer.

1           16.      The shielded electrical wire of Claim 11 wherein said tape comprises a second  
2 insulation layer surrounding said conductive layer.

1           17. The shielded electrical wire of Claim 16 wherein said insulation layers are offset  
2 laterally on opposite surfaces of said conductive layer to expose inner and outer lateral end  
3 portions thereof.

1           18. A method of manufacturing an insulated electrical wire that is shielded from  
2 electromagnetic and radio frequency interference, comprising;  
3 spirally winding around the wire a tape having an outer insulation layer and an inner  
4 conductive layer, and  
5 heating and curing said tape on the wire to form a substantially continuous surface  
6 thereon.

1           19. The method of Claim 18 wherein the wire is cleaned and preheated before the tape  
2 is wound thereon.

1           20. The method of Claim 19 wherein the wire is preheated to a temperature of  
2 approximately 650°F.

1           21. The method of Claim 18 wherein the tape wound around the wire is cured by  
2 passing it through a heated metal compression sealer at a temperature of approximately 800°F.

1           22. The method of Claim 18 wherein said outer insulation layer is formed of PTFE and  
2 said inner conductive layer is formed of metallic powder dispersed in PTFE.

1           23. The method of Claim 22 wherein said metallic powder is selected from the group  
2 consisting of copper, iron, nickel, aluminum, silver, gold and carbon, alone or in combination.  
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